

AMENDMENT UNDER 37 C.F.R. §1.111  
U.S. APPLN NO.: 10/695,397

**REMARKS**

Claims 1-22 are all the claims pending in the application. By this Amendment, new claims 20-22 are added.

As a preliminary matter, Applicant requests entry of the changes to the Specification, the Abstract and claim 1 to correct a typographical error. Applicant submits the changes to replace “local address” with --logical address--. It is believed that the changes to claim 1 do not affect its scope to necessitate a new prior art search.

Claims 1-19 are rejected under 35 U.S.C. § 102(e) as being anticipated by Lai *et al.* (U.S. Patent Publication No. 2003/0093610A1; hereinafter “Lai”). Applicant submits the arguments below in traversal of the claim rejections.

Applicant respectfully submits that claim 1 is patentable because each and every element of the claim is not disclosed or suggested by Lai. Claim 1 recites:

A flash memory having a map block, the map block comprising:  
a *first mapping table* containing a physical address allocated to a block of a plurality of blocks, wherein the plurality of blocks constitute a data block and status information of each of the plurality of blocks;  
a second mapping table containing mapping information between the physical address and a logical address of each of the plurality of blocks in the first mapping table from which error blocks are excluded; and  
a *third mapping table* in which most recent mapping information is written and processed by a specified value to minimize an update operation of the second mapping table.

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For example, Lai fails to disclose or suggest, *inter alia*, the first mapping table and the third mapping tables as claimed.

Lai relates to an algorithm for the management of mapping tables of the logical block addresses and corresponding physical block addresses in flash memory. In a flash memory, the data is stored in physical blocks. In the flash memory of Lai, a number of physical blocks constitute a segment. *See* Paragraph 22. With each segment, there is a special reserved block for recording the updated mapping information. *See id.*

When a host computer is turned on, the mapping table can be retrieved from the special reserved block without rescanning the logical addresses to reconstruct the mapping table. Because the logical addresses are not rescanned, the *entire* mapping table for that segment is stored in the special reserved block. *See* Paragraph 24, lines 16-26; *see also* paragraph 25.

In the Office Action, the Examiner argues that Lai discloses the claimed first mapping table by referring to lines 2-6 of the Abstract which state:

... an algorithm of flash memory capable of quickly building a mapping table and preventing disorder of data due to abnormal disconnection and a control system thereof, wherein *pages of a physical block store data of the mapping table of logical block addresses and corresponding physical block addresses.*

As explained above, the data of the mapping table that are stored in the pages of a physical block (as mentioned in the cited portions of the Abstract) refer to the storage of the mapping table in the special reserved block.

The Examiner, however, also argues that the data stored in the “special reserved block of mapping update” corresponds to the claimed third mapping table.

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Applicant respectfully submits that the Examiner has not shown how the first and the third mapping tables are disclosed by Lai. Rather, the Examiner cites the data of the mapping update stored in the special reserved block as corresponding to both the first mapping table and the third mapping table. Because the teachings of Lai allegedly corresponding to the claimed elements are not arranged as required by the claim, Lai cannot teach each and every element of claim 1. *See* MPEP 2131.

Claims 2 and 3, which depend from claim 1, are patentable for at least the reasons submitted for claim 1.

For reasons similar to those submitted for claim 1, claims 4 and 6 are believed to be patentable.

In addition, claim 4 is believed to be patentable because Lai fails to disclose the claimed fourth mapping table containing free block information through the first, second and third mapping tables obtained from a map block in the flash memory. To the contrary, Lai merely discloses the storing of the mapping table of a segment from a page of a physical block, i.e., the mapping update from the special reserved block, in a mapping buffer and does not disclose a new fourth mapping table.

Assuming *arguendo*, that three of the segmented pages, MT<sub>0</sub>, MT<sub>1</sub>, MT<sub>2</sub> (storing the previous older mapping information) correspond to the claimed first, second and third mapping tables, Lai still fails to disclose a fourth mapping table because the older mapping information in MT<sub>0</sub>, MT<sub>1</sub>, MT<sub>2</sub> are not used to generate a fourth mapping table. Rather, the previous mapping information in MT<sub>0</sub>, MT<sub>1</sub>, MT<sub>2</sub> are independent of each other and do not require prior mapping information to generate the complete mapping information. This is so because Lai discloses that

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when the special reserved block is filled up, i.e., the last  $MP_m$  is written and all pages of the special reserved block,  $MT_0, MT_1, MT_2, \dots, MT_m$ , are used, the entire special reserved block is erased and the updated mapping information is stored starting from  $MT_0$ . In such a case, the information from the prior pages  $MT_{m-2}, MT_{m-1}, MT_m$ , would not exist so that there would be a fourth mapping table containing free block information through the first, second and third mapping tables obtained from a map block in the flash memory.

Claim 5, which depends from claim 4, is patentable for at least the reasons submitted for claim 4.

Claims 7-19, which depend from claim 6, are patentable for at least the reasons submitted for claim 6.

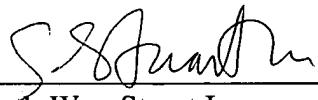
Lastly, new claims 20-22 are added to more fully claim the invention. The new claims 20-22 are believed to be patentable for at least the reasons submitted for claim 1.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

  
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